

subject go to show that no good result can be expected from the application of a single ligature above the tumour, as was employed in the above case. The method of Hunter offers not the shadow of a chance of benefit, the blood after it being at once brought back to the point of opening in the vessel by the collateral arteries, and entering immediately the vein again reproduces the disease. Nothing less than securing the vessels both above and below the seat of aneurism, whatever region of the thigh may be its seat, can in any way be justifiable, and by such means the chances of secondary hemorrhages and gangrene, as we have just shown, are so very great, and the probability of success so immeasurably small, that we think all prudent surgeons would hesitate before resorting to it.

30. *Spontaneous Softening of Stone in the Bladder.*—Spontaneous fractures of stone in the bladder have been not very unfrequently noticed, but the following is, so far as we know, the first instance reported in which anything like softening of a stone occurred while it remained in that viscus. The case, as reported, is, to say the least, a very remarkable one; we give it as communicated to the Academy of Medicine, on the 22d of September, 1840, by M. SEGALAS, in whose practice it is stated to have occurred.

A farmer, *ætat.* 60, from whose bladder two stones of uric acid had been removed six years previously, by M. Souberbielle, came to Paris again, suffering with symptoms of calculus, and placed himself under the care of M. Segalas, who detected a large stone, giving, when struck, a clear sound. After repose and an appropriate treatment, the operation of lithotripsy was attempted on the 28th of December, 1839. The stone was twice seized, but each time it escaped from the instrument, leaving upon its teeth but slight portions of its exterior shell. Symptoms which afterwards occurred, rendered the immediate performance of lithotripsy inapplicable, and it was determined to resort to the operation of lithotomy, for which purpose the patient returned to his village, making part of the journey on foot, and part in the stage coach. On the 8th of January following, M. Segalas arrived at his house and found him suffering severely; he refused any new trial of lithotripsy, and insisted upon being at once cut. The high operation was performed, and upon seizing the calculus it at once yielded to pressure, and nothing but its central portion was extracted, the greater part of it being of a pasty consistence, escaped from the forceps, and remained in the bladder, from which it was extracted with difficulty by means of the scoop, aided by the fingers and injections. Thus a stone, which was so hard as to resist the lithotritic instrument, was found, eleven days afterwards, to be softened on its exterior to the consistence of paste, and to yield under the pressure of the forceps, even to its very centre.

Under the influence of what cause did so sudden a change take place? Of this M. Segalas is ignorant, but states that the calculus was proved by the analysis of M. Lecanu to be composed of phosphate of lime and animal matter, and that the softening coincided with a catarrhal inflammation of the bladder. In less than four weeks the patient entirely recovered.

31. *New local application to Erysipelas.*—M. VELPEAU has employed, he says, with advantage, in the treatment of erysipelas, the sulphate of iron as an application to the inflamed part. He has used it both in solution and in ointment. The former is prepared by dissolving an ounce of the salt in a pint of water; the latter by rubbing up a drachm of the salt in an ounce of lard. M. V. says that the former exerts most control over the inflammation, generally subduing it in two days.—*La Lancette Française*, November 7, 1840.

32. *Mechanism of Purulent Absorption.*—M. VELPEAU maintains that the depositions of pus and metastatic abscesses which take place after injuries, wounds, or surgical operations, depend on an alteration of the blood. "Any suppurating wound," he remarked in a late clinical lecture at La Charité, "may give rise to metastatic abscess; a simple incision of the pericranium; division of a varicose vein; excision of a pile; venesection; these simple injuries may excite the

disease just as readily as the more dangerous operations of lithotomy, amputation, or excision of the neck of the uterus; in some cases, metastatic abscess has arisen as a consequence even of a seton, a blister, or a common boil. These facts have been long well known. Ambroise Paré mentions them; Pigray alludes to a certain year during which metastatic abscess of the liver was found in all the patients who died of injuries of the head. Morgagni relates in full several cases of purulent absorption; in one case the right pleura was found filled with pus, the patient having received a wound on the left side of the chest, which had no communication with the cavity of the pleura. In another case he mentions the occurrence of encysted deposits in the lungs of a young man who died on the sixteenth day after a penetrating wound of the chest; he likewise relates, after Valsalva, four cases of injury of the head, followed by purulent deposit in the lungs or pleura. Several other writers mention similar cases, and interpret them each according to his own fashion; I may mention to you the names of Quesnay, Col de Villars Marchette, Bohn, Baillou, Molinelli, Petit, Ledran, &c. However, the facts recorded do not seem to have attracted sufficiently the attention of surgeons, until I described the affection in a more careful and detailed manner. At the commencement of my medical studies at Tours, I was struck with the frequency and danger of this disease, and made it the subject of much research. In 1818, I noted a case of purulent absorption, and then pointed out what I believe to be its true cause. The facts observed since then have only confirmed my original opinion, and I still uphold, as I did then, that metastatic abscesses are not the result of separate and local inflammations, but of the alteration in the blood caused by the admixture of pus. It was no easy matter to sustain this humeral theory at a time when the physiological school was all-powerful; but it has been generally adopted both in France and in foreign countries.

"For a long time, writers confounded metastatic abscesses with certain morbid secretions; thus some excellent pathologists regarded them as tubercles which had rapidly softened, but these ideas have been recently abandoned, and the true explanation very generally adopted. On one point, however, authors are not well agreed; and that is the manner in which the pus becomes mixed with the blood. Marechal, Legallois, Rochoux, and others think that it may be explained by venous absorption from the surface of wounds; others, as Dance, Blandin, Arnott, &c., assert that the presence of pus is always preceded by inflammation of the veins, which produces the matter found in the circulation or tissue of organs after death; according to the latter authorities, pus cannot be transported from one part of the body to another without undergoing decomposition. Hence, gentlemen, we have two theories of metastatic abscess; one consisting in simple absorption from the surface of wounds; the other in inflammation of the veins. For my part, I feel convinced that inflammation of the vein does not constantly exist, but that the affection may be produced either as a consequence of phlebitis or of simple absorption. I perfectly agree with Dance, Berard, and Blandin, as to the pernicious effects of phlebitis on the blood; but I differ from them completely in this, that I do not admit phlebitis to be the primitive or even frequent cause of metastatic abscess; the veins, it is true, are frequently inflamed, and may, in certain cases, be the cause of purulent absorption; but in many others we have no inflammation of the veins, and the pus may be introduced into the torrent of the circulation either by the lymphatics, the veins which open on the wound, or by imbibition. How often have I found large collections of pus in the viscera, without being able to detect the slightest trace of inflammation in any part of the venous system? Upon this point I am positive, having determined it so frequently by the most careful examination.

"The manner in which the pus is deposited has likewise excited some controversy. Dance thinks that the blood, rendered more fluid by the pus and altered in its qualities, first gives rise to a small point of ecchymosis, and then to local inflammation before the abscess is formed; this may occasionally happen; but in the majority of cases the pus, I think, is deposited as it was introduced; many a time have I seen the brain, liver, spleen, kidneys, &c. filled with

little abscesses not larger than a hempseed; yet on the most minute examination I was unable to discover any lesion of the surrounding tissues; sometimes, indeed, we find the capillary phlebitis so well described by M. Cruveilhier, but this is certainly rare. If we allow that a single drop or globule of pus may be deposited in any organ or tissue, there is no reason why several globules should not be deposited together, so as to form an abscess; and we can, I should think, easily admit, that pus mixed with blood has a constant tendency to separate from it. While the two fluids are enclosed in large vessels, and the circulation is rapid, the separation cannot take place; but in the capillary system, where the circulation is, as it were, merely oscillatory, where so many secretions and new combinations take place, the elimination of pus from the blood can be readily understood; it is, in some sort, analogous to the secretion of urine, bile, saliva, &c.

"The morbid specimens which I now show you are of very great value in connection with the subject of purulent absorption. They were taken from the body of a young man on whom I operated in January 1840 for a tumour of the scrotum which contained the elements of a fœtus. A few days after the operation he was seized with symptoms of pleurisy and pneumonia; still the violent rigors which characterize the onset of purulent absorption were not present. After death, the left side of the chest was found filled with sero-purulent fluid mixed with a quantity of false membrane; there were, at least, two quarts of this fluid. The lungs which you see before you contained an immense number of small abscesses, but the surrounding tissue is perfectly healthy. You can easily understand how a disease like this resisted all our means of treatment; how general bleeding, antimonials, revulsives, &c. would have failed to arrest it; the man's fate was sealed from the moment he was attacked.

"Any of you who watched this interesting case, will remember that the symptoms of pleurisy and pneumonia were, all along, very obscure and anomalous; the patient was overwhelmed with a degree of weakness and stupor which seldom occur in conjunction with these diseases. In almost every case of purulent absorption that I have cited to you, violent rigors were one of the most characteristic symptoms; here they were entirely absent; and this is worthy of notice, as putting us on our guard in cases where no trembling or rigors may exist.

"Another important point connected with this case is the state of the veins of the scrotum. You cannot find the least trace of inflammation here, or in any of the other veins; the fact is clear and indisputable.

"*Prognosis.*—The prognosis of purulent absorption is extremely unfavourable; from the insidious manner in which this affection commences, it is very difficult to detect it at an early stage, and at a later period the resources of our art are unavailing. Whenever a patient who has undergone any operation, or labours under abscess or a suppurating wound, is suddenly seized with severe rigors, with alteration of the countenance and fever, we have to dread fatal results, for death is the usual termination of metastatic abscess. We must not, however, completely despair of saving the patient; for when the unfavourable symptoms last for two or three days only, or when they terminate in some crisis by the urine, general perspiration, &c., and the febrile symptoms subside, some hope is left; I have seen several patients recover under these circumstances; however, we must allow that such cases are very rare.

"*Treatment.*—The treatment of metastatic abscess is not well determined; at first, this terrible affection was combated with general bleeding, leeches, &c.; but these remedies are only applicable to an early stage of the complaint in robust individuals; besides, the antiphlogistic method very rarely succeeds; I have tried it myself in a great number of cases, and must confess that I have seldom derived any advantage whatever from it; however, it may be of some use in cases where there is evident inflammation with severe pain. Purgatives have been much employed, and I have derived much advantage from this class of remedies when given at an early period; tartar emetic in high doses has been recommended by Laennec, Breschet, Sanson, &c., and successful cases have been recorded; for myself, I have been much less fortunate than the surgeons

just mentioned, for the patients whom I have treated with tartar emetic died, as well as the others; the white oxide of antimony, in doses of one or two drachms, was equally inefficacious. The same remark will apply to camphor, ether, opium, ammonia, and other stimulants; the latter, instead of doing good, seemed to hasten the progress of the disease. Sulphate of quinine has been given with the effect of arresting the rigors, but it produced no permanent improvement. Large blisters to the legs, or on the chest and abdomen, according to the seat of pain, should not be neglected; M. Blandin assures us that he succeeded in curing one patient by the application of several blisters to the limbs and trunk, with the internal use of diuretics and sudorifics.

"You see, gentlemen, that our resources are very limited indeed; in fact we can hardly say that medicine effects anything. The following, however, is the mode of treatment which I would advise you to adopt, should any of your patients present the symptoms of this dreadful malady. Endeavour, in the first place, to determine the fluids towards the wound by large poultices; at the same time apply blisters on the legs or thighs; give some diuretic tisan internally; if the patient be young and robust, the pulse full and strong, then bleed; if he complain of severe pain in the chest or abdomen, apply some leeches or cupping-glasses. Should the wound present a dry, unhealthy aspect, you may employ a bark lotion, or in certain cases apply leeches, or scarify it, or put on a blister; these means are particularly indicated when you have any reason to suspect the existence of phlebitis. You may also envelope the limb in a bandage from the wound towards the trunk so as to exercise powerful compression; purgatives, also, should be employed in addition to the means now pointed out. Should stupor, with meteorismus and dark incrustation of the mouth exist, you may try tartar emetic in high doses. When the patient is very feeble, give the bark or the sulphate of quinine, especially in cases where the symptoms are intermittent. Of the local means, there is none in which I have so much confidence as the bandage, if applied before the pus has found its way in any quantity into the circulation. In inflammation of the veins of the extremities, when the disease has not ascended beyond the venous radicles, and before the formation of metastatic abscess, we can almost always arrest it by the bandage; even when the blood has been tainted, we may still employ it, because we thus cut off the poison, and give the vital powers a chance of overcoming the malady."

The following is one of the cases related by M. V. illustrative of the efficacy of the above mode of treatment:

"In February 1828, M. O—, student in medicine, thirty years of age, scratched his left thumb while placing a dead body on a dissecting table. The next day he felt some pain in the part, but thought nothing of it.

"On the 3d day he was seized with a violent rigor; the face was pale and anxious, and patient felt so ill that he went to bed. The thumb was now swollen; there was considerable fever; he passed a disturbed night. I saw him on the 4th day; the pulse was now 115, strong and hard; skin burning dry; face of an earthy yellow hue; no pain in chest or belly; hand much swollen; arm also tumefied, but less so; the pain is most severe on the back of the hand near the angle between the index and middle fingers. He was bled to twelve ounces. In the evening the inflammation had extended considerably; the fingers and hand were so livid and swollen that it seemed as if they were on the point of becoming gangrenous. I applied the bandage up to the arm-pit; it was moistened from time to time with cold water.

"5th. The fever has ceased; face more natural; inflammation of the fore-arm diminished, but severe pain is still felt in the hand which is considerably swollen; the epidermis is detached by a large phlyctæna. The bandage was reapplied as before; during the next twenty-four hours excessive pain and sense of heat felt in the hand.

"6th. Arm free from inflammation; fore-arm better; the hand still very painful and tumid; as it was thought that pus was collected, the original wound was enlarged with the bistoury, but nothing escaped. The bandage was again applied, and considerable pressure made on the fingers and hand, but this

caused such severe pain that the patient was forced to remove it during the night.

"7th. Arm quite well; hand less red and tumid; on the 9th day, the patient was in all respects much better; there occurred, however, some gangrenous spots on the extremities of the fingers, but the injury caused by them was very slight, except on the index, where the nail and part of the last phalanx were lost. The patient was soon restored to complete health."—*Prov. Med. and Surg. Journ.*, August 14, 1841.

33. *On the cure of Spina Bifida by a new operation.* By M. DUBOURG.—In order to obtain a radical cure of the disease called spina bifida, two conditions must exist; it must be simple, and not the result of rickets; and, second, it must be of small extent. On reflecting upon the method employed by Sir A. Cooper for the cure of this intractable affection, I thought that a better mode might be adopted, and the following were the reasons on which my theory was founded. Recent observations have shown that the soft parts contiguous to osseous parts which have been arrested in their development exercise considerable influence on the bringing together of these latter; we have an example of this in division of the maxillary and palatine bones. In cases of cleft palate, &c., when the soft parts are brought together by suture, they have a constant tendency to approximate the divided bones, and do eventually effect this object whenever the deformity is not very considerable. From analogy, then, we may conclude that by bringing together the soft parts over the divided spine, (after removal of the sac,) in cases of spina bifida, we may favour the approximation of the osseous parts, and finally obtain a radical cure. The great difficulty in this undertaking is to prevent the introduction of air into the cavity of the vertebral canal, and the escape of the cerebro-spinal fluid, accidents which are generally regarded as extremely dangerous; besides, it has been thought that the tendency of the cerebro-spinal fluid to escape through the wound would prevent the complete formation of any cicatrix. Reflecting, however, that even wounds of the head, by which the substance of the brain was exposed, occasionally healed, I thought that the above objections might be overcome; I determined on seizing the first opportunity of putting my ideas in practice. As a measure of precaution, it seemed to me prudent to embrace a considerable depth of soft parts in the ligatures, and that the twisted ligature which I used, should be much thicker than the one commonly employed.

CASE I. *Child eight days old—spina bifida—excision of the sac—twisted suture—cure.*—In the spring of 1837 I was summoned to examine a little girl eight days old, who had a tumour on the lumbar region which two medical men had been unable to characterize. At first sight, the nature of the tumour seemed doubtful; it was not larger than an apple, slightly flattened, firm to the touch, and attached by a pedicle of about five and a half lines in diameter; covered with a net-work of turgid veins, it had the appearance of a vascular fungus. On examining the base of the tumour, we discovered two osseous edges, and in the centre a want of resistance evidently arising from defective ossification of the vertebrae; the opening might receive the tip of the index finger. The tumour was opaque, and its walls were very thick, much denser than in cases of well-developed hydrorachis; as to the seat, it seemed to occupy the last lumbar vertebrae; all the others were perfectly formed. The child presented no other deformity; the head was not large; all the organs and functions were healthy; the operation, therefore, might be undertaken under favourable circumstances.

An elliptical incision was made round the base of the tumour, but as soon as its pedicle was divided, a quantity of reddish serum escaped; the excision of the sac was, therefore, rapidly effected. To close the opening, the end of the index finger was placed over the vertebral deficiency, but it penetrated into the canal and came in contact with the exposed spinal marrow. The edges of the wound were now brought together with four needles, and the twisted suture applied as in hare-lip.

The child cried vigorously at the commencement of the operation, but as soon